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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,881	02/13/2002	Yong Wang	B-1482-CIP2	1025

7590 07/21/2003
Frank S. Rosenberg
18 Echo Hill Lane
Moraga, CA 94556

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EXAMINER

YILDIRIM, BEKIR L

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,881

Applicant(s)

WANG ET AL.

Examiner

Bekir L. YILDIRIM

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5, 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Isogaya et al. (USP 4,331,451) alone or in view of Kobylinski (USP5,122,527).

Isogaya et al. teaches a steam reforming process wherein the reaction temperature is preferably 800-1100 oC (col. 7, lines 41-43). Preferred residence time is 0.1 to 10 seconds (col. 1, lines 63-66). Suitable catalysts comprise alumina, zirconia, nickel, cobalt, calcium aluminate, tungsten containing nickel (col. 2, lines 60-66).

It is acknowledged that Isogaya et al. fails to disclose the residence time of less than 0.1 seconds. The invention as a whole would have been obvious to one having ordinary

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skill in the art at the time the invention was made, because, it would be within ordinary skill, to accept lower conversion rates, as suggested by Isogaya et al., at lower residence times (col. 4, lines col. 4, lines 64-66). It is noted that the conversion rate in the instant claims is as low as 50%.

In the alternative:

Kobylinski teaches the interdependency of the parameters, including that between the reaction temperature and residence time, in steam reforming while emphasizing the importance of minimizing residence time (col. 5, lines 10-15, col. 6, lines 20-33, 47-51, col. 7, lines 2-15, 47-60). Further, the dependency of conversion rate on to residence time is given. Kobylinski teaching, along with the conventional knowledge points to the conclusion that the specification of residence times alone, especially with conversion rates as low as 50% is nearly meaningless. While a group of catalysts are specified, all of the specified catalysts are conventional (see references below). Specifying a group of catalysts, a conventional temperature range, and a short residence time, does not constitute an unobvious invention. What the applicant does to achieve such short residence time and under what set of conditions such residence time is achieved is missing.

The following references are cited to show that the catalysts in the claims are conventional:

Bangala et al. discloses that rhodium, nickel on alumina and nickel on zirconia are known steam reforming catalysts (col. 6, lines 40-58)..

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Fujitani et al. teaches a steam reforming process with a catalyst comprising rhodium on a support selected from magnesia, alumina magnesia-alumina spinel among others, which has an average pore diameter of about 200 to 15,000 angstrom (col. 3, lines 28-31).

Stahl teaches a steam reforming process with a catalyst comprising nickel on a support selected from, alumina, spinel, magnesia, alumina-silica, mixtures and combinations (col. 3, lines 6-11). The reaction temperature is about 750-950 OC (col. 3, lines 28-320).

Priegnitz et al. teaches a steam reforming process with catalysts including nickel, nobler metals on supports such as magnesia, magnesium aluminate, alumina, zirconia under temperatures of 650-950 OC (col. 5, line 63-col. 6, line 150)

Bentley et al. teaches a steam reforming process with catalysts comprising nickel, and noble metals on supports such as magnesia, magnesium aluminate, alumina, zirconia or combinations (col. 6, lines 29-40).

Tanaka et al. teaches a steam-reforming process with catalysts selected from rhodium and platinum on magnesium aluminate support (col. 12, lines 25-32).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

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Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-20 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-21 of U.S. Patent No. 6,284,217 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are directed to essentially the same steam reforming process employing the same catalysts, with the differences in reaction conditions, and catalyst limitations affecting the scope of the invention rather than the substance, with both groups claiming common subject matter..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bekir L. YILDIRIM whose telephone number is (703) 308-3586. The examiner can normally be reached on 10:30-8:00 (alternating Mondays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (703)308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9467 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0611.

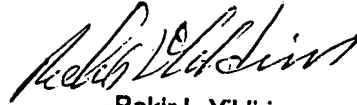
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BLY

July 14, 2003



Bekir L. Yildirim
Primary Examiner